

AMENDMENTS TO THE CLAIMS

Please amend Claims 1, 2, 7, 9 and 10, cancel Claim 6 and add Claim 12.

Following entry of the amendments in this Amendment, the pending claims in the present application read as follows:

- 1 1. (Currently Amended) A system for processing reflected infrared signals which are
- 2 used to control the flow of water from a ~~water faucet or the like~~ fluid dispensing device,
- 3 said system comprising:
 - 4 an IR transmitting device for transmitting an IR signal toward a location proximate
 - 5 the place from which water may be dispensed from the ~~faucet~~ fluid dispensing device;
 - 6 an IR receiving device for receiving a reflected IR signal from a detection range
 - 7 proximate the location from which water may be dispensed from the ~~faucet~~ fluid
 - 8 dispensing device, said IR receiving device providing an output signal, said output signal
 - 9 being proportional to the magnitude of the reflected IR signal; and
 - 10 control logic configured to receive said output signal from said IR receiving
 - 11 device, wherein said control logic compares said output signal with an activation
 - 12 threshold to determine the presence of an object within said detection range, said control
 - 13 logic further configured to detect the occurrence of motion within said detection range,
 - 14 including calculating the difference between consecutive samples of said output signal
 - 15 from said IR receiving device and comparing said difference to a pre-programmed static

16 value that is indicative of movement of an object within said detection range, said control
17 logic providing a water control signal which may be used to control the flow of water
18 through the faucet fluid dispensing device based upon the results of the determination of
19 the presence of an object within the detection range and the occurrence of motion within
20 said detection range.

1 2. (Currently Amended) A system defined in Claim 1, said system further comprising
2 a water control valve, and wherein said control logic is configured to activate the said
3 water control valve when either the presence of an object within the said detection range
4 is determined or the occurrence of motion within said detection range is determined.

1 3. (Previously Presented) A system as defined in Claim 2, wherein said control logic
2 is further configured to execute a timer for a predetermined time interval when said water
3 control valve is activated, and to deactivate said water control valve when timer expires
4 or when the presence of an object within the detection range is no longer determined.

1 4. (Previously Presented) A system as defined in Claim 3, wherein said control logic
2 is configured to detect an increase in said output signal from said IR receiving device and
3 activate the water control valve in response thereto.

1 5. (Previously Presented) A system as defined in Claim 1, wherein said IR
2 transmitting device periodically emits IR pulses, and wherein said IR receiving device is
3 positioned to detect reflections of said IR pulses from said IR transmitting device.

1 Claim 6 (Cancelled).

1 7. (Currently Amended) A method for processing reflected infrared signals which are
2 used to control the flow of water from ~~a water faucet or the like~~ fluid dispensing device,
3 said method comprising the steps of:

4 transmitting an IR signal from an IR transmitting device toward a location
5 proximate the place from which water may be dispensed from the ~~faucet~~ fluid dispensing
6 device;
7 receiving a reflected IR signal with an IR receiving device from a detection range
8 proximate the place from which water may be dispensed from the ~~faucet~~ fluid dispensing
9 device, said IR receiving device providing an output signal which is proportional to the
10 magnitude of the reflected IR signal;

11 comparing said output signal from said IR receiving device to an activation
12 threshold to determine the presence of an object within said detection range;

13 detecting the occurrence of motion within a said detection range including
14 calculating the difference between consecutive samples of said output signal from said IR

15 receiving device and comparing said difference to a pre-programmed static value that is
16 indicative of movement of an object within said detection range; and
17 controlling the flow of water through the ~~faucet~~ fluid dispensing device based
18 upon the results of said comparing and detecting steps.

1 Claim 8 (Cancelled).

1 9. (Currently Amended) A method as defined in Claim 7, wherein said controlling
2 step comprises activating ~~the the a~~ water control valve when either the presence of an
3 object within the detection range is determined or the occurrence of motion within said
4 detection range is determined.

1 10. (Currently Amended) A method as defined in Claim 9, said method further
2 comprising the steps of:
3 setting a timer for a predetermined interval upon activation of the water control
4 valve;
5 detecting the presence or absence of motion during said predetermined interval;
6 and
7 deactivating the water control valve when said predetermined time interval expires
8 ~~or when the water control valve when either the presence of an object within the~~

9 ~~detection range is determined or the occurrence prior to the detection~~ of motion within
10 said detection range ~~is determined~~.

1 11. (Previously Presented) A method as defined in Claim 9, said method further
2 comprising the steps of:

3 detecting the presence or absence of an increase in said output signal from said IR
4 receiving device; and
5 activating the water control valve in response to an increase in said output signal
6 from said IR receiving device.

1 12. (New) A method for processing reflected infrared signals which are used to
2 control the flow of water from a fluid dispensing device, said method comprising the
3 steps of:

4 transmitting an IR signal from an IR transmitting device toward a location
5 proximate the place from which water may be dispensed from the fluid dispensing
6 device;
7 receiving a reflected IR signal with an IR receiving device from a detection range
8 proximate the place from which water may be dispensed from the fluid dispensing
9 device, said IR receiving device providing an output signal which is proportional to the
10 magnitude of the reflected IR signal;

11 comparing said output signal from said IR receiving device to an activation
12 threshold to determine the presence of an object within said detection range, said
13 activation threshold being initially determined using an ambient reading of IR energy
14 present in surrounding environment and an ambient reflection reading without an object
15 in said detection range, and said activation threshold being dynamically adjusted to
16 account for changes in ambient IR and ambient reflection IR;
17 detecting the occurrence of motion within said detection range, including
18 calculating the difference between consecutive samples of said output signal from said IR
19 receiving device and comparing said difference to a pre-programmed static value that is
20 indicative of movement of an object within said detection range; and
21 controlling the flow of water through the fluid dispensing device based upon the
22 results of said comparing and detecting steps.